

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1-24. (Canceled)

25. (Currently amended) A method of prioritizing and granting bus access requests in a system that comprises a table of slots assigned to bus masters, wherein the table has a number of slots and one of the slots serves as an access slot, and wherein at least one of the bus masters is assigned to multiple slots in the table, the method comprising:

(a) granting the a bus access request of a requester bus master asserting a high priority interrupt;

(b) if no requester bus master is asserting the a high priority interrupt, determining whether a bus master making a bus access request is currently assigned to the access slot in the table, and granting the bus access request of a requester owning the current request slot that bus master if it is determined that the bus master is currently assigned to the access slot in the table; and

(c) if no requester bus master is asserting the high priority interrupt and no requester owns the current request bus master making an access request is assigned to the access slot, granting the a bus access request of a requester bus master highest on a round robin priority list.

26. (Currently amended) The method of claim 25, further comprising wherein the step (a) further comprises:

granting access to a generating the high priority interrupt for a processor operating on a real-time signal when the processor has been in a wait state for a time-out period.

27. (Original) The method of claim 26, wherein the time-out period is programmable.

28. (Currently amended) The method of claim 26, wherein a first bus master is assigned more slots in the table than a second bus master when the processor has been in the wait state for the time out period, the high priority interrupt is asserted.

29. (Currently amended) The method of claim 26, further comprising wherein the step (b) further comprises:

if the bus access request of the requestor owning a bus master assigned the access slot current request list is granted, updating a the table so that a different one of the bus master entries in the table is assigned to the access slot of request slot owners.

30. (Currently amended) The method of claim 29, further comprising:

if the bus access request of the requestor a bus master highest on the round robin priority list is granted, updating the round robin priority list and also updating the table so that a different one of the bus master entries in the table is assigned to the access slot of request slot owners.

31-39. (Canceled)

40. (New) The method of claim 29, further comprising a step of:

assigning a number of slots in the table to each bus master based upon the relative bandwidth requirements of the bus masters.

41. (New) A method for controlling access to a bus by at least first and second bus masters, comprising:

(a) controlling access to the bus by the first and second bus masters so that, during periods when all requests for access to the bus are of the same priority level, the first and second bus masters are guaranteed to have access to first and second respective portions of the available bandwidth of the bus, with the first portion being greater than the second portion.

42. (New) The method of claim 41, further comprising:

(b) when a high priority bus access request is received from a bus master, granting that bus master access to the bus prior to granting access to the bus based on simultaneous lower priority bus access requests from other bus masters.

43. (New) The method of claim 42, wherein the step (a) further comprises:

controlling access to the bus by the first and second bus masters based on entries in a table comprising a fixed number of slots assigned to bus masters, wherein more slots are assigned to the first bus master than the second.

44. (New) The method of claim 43, wherein the step (a) further comprises:

granting a bus master access to the bus if that bus master is assigned to an access slot in the table.

45. (New) The method of claim 44, wherein the step (a) further comprises:

updating the table so that a different one of the bus master entries in the table is assigned to the access slot in the table.

46. (New) The method of claim 45, wherein the step (a) further comprises:

if no bus master making a bus access request is assigned to the access slot in the table, granting a bus master access to the bus based on a current state of a round robin list of priority assignments for bus masters.

47. (New) The method of claim 44, wherein the step (a) further comprises:

if no bus master making a bus access request is assigned to the access slot in the table, granting a bus master access to the bus based on a current state of a round robin list of priority assignments for bus masters.

48. (New) The method of claim 41, wherein the step (a) further comprises:
controlling access to the bus by the first and second bus masters based on entries in a
table comprising a fixed number of slots assigned to bus masters, wherein more slots are
assigned to the first bus master than the second.

49. (New) The method of claim 48, wherein the step (a) further comprises:
granting a bus master access to the bus if that bus master is assigned to an access slot in
the table.

50. (New) The method of claim 49, wherein the step (a) further comprises:
updating the table so that a different one of the bus master entries in the table is assigned
to the access slot in the table.

51. (New) The method of claim 50, wherein the step (a) further comprises:
if no bus master making a bus access request is assigned to the access slot in the table,
granting a bus master access to the bus based on a current state of a round robin list of priority
assignments for bus masters.

52. (New) The method of claim 49, wherein the step (a) further comprises:
if no bus master making a bus access request is assigned to the access slot in the table,
granting a bus master access to the bus based on a current state of a round robin list of priority
assignments for bus masters.